Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in this application.

Listing of Claims:

1. (Previously Presented) An image-forming apparatus comprising:

at least one image-forming section that has an exposing unit and a developing unit, said at least one image-forming section printing an image of a density detection pattern having a plurality of pattern segments of different duties expressed in terms of a number of dots per unit area, the image being printed on a print medium under a predetermined printing condition;

a density detector that outputs detection values indicative of densities of the plurality of pattern segments printed on the print medium; and

a controller that determines a correction value based on differences between the detection values and corresponding target values of the plurality of pattern segments, the correction value being weighted in accordance with the detection values of the plurality of pattern segments, and being used to modify the printing condition.

2. (Original) The image-forming apparatus according to Claim 1, wherein said at least one image-forming section is one of a plurality of image-forming sections that print images of different colors.

3. (Currently Amended) The image-forming apparatus according to Claim 1 wherein said controller controls said image-forming section and said density detector to perform:

a first density detection operation in which said at least one image-forming section forms the image of density detection pattern with a first printing condition, and then said controller calculates a first correction value based on the density of the plurality of pattern segments detected by said density detector, said controller producing a second printing condition using the first correction value ~~the correction value~~; and

a second density detection operation in which the image-forming section forms the image of density detection pattern with the second printing condition, and then said controller calculates a second correction value based on the density of the plurality of pattern segments detected by said density detector, said controller producing a ~~second~~ third printing condition using the second correction value.

4. (Original) The image-forming apparatus according to Claim 3, wherein the plurality of pattern segments include a low duty segment, a medium duty segment, and a high duty segment;

wherein the low duty segment has a density not more than 50%, the medium duty segment has a density in the range of 30 to 80%, and the high duty segment has a density not less than 60%;

wherein densities of the low, medium, and high duty segments are related such that $D_L<D_M<D_H$ where D_L is the density in the low duty, D_M is the density in the medium duty, and D_H is the density in the high duty.

5. (Previously Presented) The image-forming apparatus according to Claim 4, wherein the first correction value indicates a correction to an amount of light emitted from the exposing unit and the second correction value indicates a correction to a developing voltage applied to the developing unit,

wherein the first correction value is calculated by Equation (1) and the second correction value is calculated by Equation (3),

$$Cl=(1/2)\{D_H\times(T_L/T_H)-D_L\}/K1+(1/2)\{D_H\times(T_M/T_H)-D_M\}/K2 \quad \cdots (1)$$

$$Cv=(1/3)(T_L-D_L)/K3+(1/3)(T_M-D_M)/K4+(1/3)(T_H-D_H)/K5 \quad \cdots (3)$$

where Cl is the first correction value,
Cv is the second correction value,
D_H is a density at a high duty not less than 60%,
D_M is a detected density at a medium duty in the range of 30 to 80%,
D_L is a density at a low duty not more than 50%,
T_H is a target density at the high duty,
T_M is a target density at the medium duty,
T_L is a detected density at the low duty,
K1 is a rate of change of D_L per unit change of the amount of light emitted from the exposing unit,
K2 is a rate of change of D_M per unit change of the amount of light emitted from the exposing unit,
K3 is a unit change of D_L per unit change of the developing voltage,
K4 is a unit change of D_M per unit change of the developing voltage,
K5 is a unit change of D_H per unit change of the developing voltage, and

D_L, D_M, and D_H are related such that $D_L < D_M < D_H$.

6. (Original) The image-forming apparatus according to Claim 5, wherein the detected detection values are sent to a host apparatus.

7. (Original) The image-forming apparatus according to Claim 3, wherein the plurality of pattern segments include a low duty segment and a medium duty segment;

wherein the low duty segment has a density not more than 50% and the medium duty segment has a density in the range of 30 to 80%;

wherein densities of the low duty and the medium duty segments are related such that $D_L < D_M$ where D_L is the density in the low duty, and $D_M <$ is the density in the medium duty.

8. (Previously Presented) The image-forming apparatus according to Claim 7, wherein the first correction value indicates a correction to an amount of light emitted from the exposing unit and the second correction value indicates a correction to a developing voltage applied to the developing unit,

wherein the first correction value is calculated by Equation (4) and the second correction value is calculated by Equation (5),

$$Cl = (1/2)\{(T_L - D_L)/K1 + (T_M - D_M)/K2\} \cdots (4)$$

$$Cv = (1/2)\{(T_L - D_L)/K3 + (T_M - D_M)/K4\} \cdots (5)$$

where Cl is the first correction value,
Cv is the second correction value,
D_M is a detected density at the medium duty,

D_L is a density at the low duty,
T_M is a target density at the medium duty,
T_L is a detected density at the low duty,
K1 is a rate of change of D_L per unit change of the amount of light emitted from the exposing unit,
K2 is a rate of change of D_M per unit change of the amount of light emitted from the exposing unit,
K3 is a unit change of D_L per unit change of the developing voltage,
K4 is a unit change of D_M per unit change of the developing voltage, and
D_L and D_M are related such that $D_L<D_M$.

9. (Original) The image-forming apparatus according to Claim 7, wherein the first correction value indicates a correction to an amount of light emitted from the exposing unit and the second correction value indicates a correction to a developing voltage applied to the developing unit,

wherein the first correction value being calculated by Equation (6) and the second correction value being calculated by Equation (7).

$$Cl=(1/(W1+W2)\{D_H\times(T_L/T_H)-D_L\}\times W1/K1+(1/(W1+W2)\{D_H\times(T_M/T_H)-D_M\}\times W2/K2 \quad \ldots (6)$$

$$Cv=\{(T_L-D_L)\times W3/K3+(T_M-D_M)\times W4/K4+(T_H-D_H)\times W5/K5\}/(W3+W4+W5) \quad \cdots\cdots (7)$$

where Cl is the first correction value,
Cv is the second correction value,

D_H is a density at the high duty,
D_M is a detected density at the medium duty,
D_L is a density at the low duty,
T_H is a target density at the high duty,
T_M is a target density at the medium duty,
T_L is a detected density at the low duty,
K1 is a rate of change of D_L per unit change of the amount of light emitted from the exposing unit,
K2 is a rate of change of D_M per unit change of the amount of light emitted from the exposing unit,
K3 is a unit change of D_L per unit change of the developing voltage,
K4 is a unit change of D_M per unit change of the developing voltage,
K5 is a unit change of D_H per unit change of the developing voltage,
D_L, D_M, and D_H are related such that $D_L < D_M < D_H$,
W1 is a weight used for correcting the amount of light in the low duty,
W2 is a weight used for correcting the amount of light in the medium duty,
W1 and W2 are related such that $W1 \geqq W2$, and
W3, W4, and W5 are weights used for correcting the developing voltages in the low, medium, and high duties, respectively, and
W3, W4, and W5 are related such that $W3 \geqq W4 \geqq W5$.

10. (Original) The image-forming apparatus according to Claim 1, wherein said controller controls said image-forming section and said density detector to perform:

a first density detection operation in which said at least one image-forming section forms the image of density detection pattern with a printing condition, and then said controller calculates a correction value based on the density of the plurality of pattern segments detected by said density detector.

11. (Original) The image-forming apparatus according to Claim 10, wherein the plurality of pattern segments include a low duty segment, a medium duty segment, and a high duty segment;

wherein the low duty segment has a density not more than 50%, the medium duty segment has a density in the range of 30 to 80%, and the high duty segment has a density not less than 60%;

wherein densities of the low, medium, and high duty segments are related such that $D_L<D_M<D_H$ where D_L is the density in the low duty, D_M is the density in the medium duty, and D_H is the density in the high duty.

12. (Currently Amended) An image-forming apparatus comprising:

at least one image-forming section that has an exposing unit and a developing unit, said at least one image-forming section printing an image of a density detection pattern having a plurality of pattern segments of different duties, the image being printed on a print medium under a predetermined printing condition;

a density detector that outputs detection values indicative of densities of the plurality of pattern segments printed on the print medium; and

a controller that determines a correction value based on the detection values and corresponding target values to modify the

printing condition, wherein said controller controls said image-forming section and said density detector to perform:

a ~~first~~ density detection operation in which said at least one image-forming section forms the image of density detection pattern with a printing condition, and then said controller calculates ~~a correction value~~ a first correction value and a second correction value based on the density of the plurality of pattern segments detected by said density detector,

wherein the plurality of pattern segments include a low duty segment, a medium duty segment, and a high duty segment;

wherein the low duty segment has a density not more than 50%, the medium duty segment has a density in the range of 30 to 80%, and the high duty segment has a density not less than 60%; wherein densities of the low, medium, and high duty segments are related such that $D_L<D_M<D_H$ where D_L is the density in the low duty, D_M is the density in the medium duty, and D_H is the density in the high duty,

wherein the first correction value indicates a correction to an amount of light emitted from the exposing unit and the second correction value indicates a correction to a developing voltage applied to the developing unit,

wherein the first correction value being calculated by Equation (1) and the second correction value being calculated by Equation (2);

$$C1=(1/2)\{D_H\times(T_L/T_H)-D_L\}/K1+(1/2)\{D_H\times(T_M/T_H)-D_M\}/K2 \quad \cdots (1)$$

$$Cv=(1/3)\{T_L-(D_L+\Delta L\times K1)\}/K3+(1/3)\{T_M-(D_M+\Delta L\times K2)\}/K4+(1/3)\{T_H-D_H\}/K5 \quad \cdots (2)$$

where Cl is the first correction value,
Cv is the second correction value,
D_H is a density at the high duty,
D_M is a detected density at the medium duty,
D_L is a density at the low duty,
ΔL is a change of amount of light,
T_H is a target density at the high duty,
T_M is a target density at the medium duty,
T_L is a detected density at the low duty,
K1 is a rate of change of D_L per unit change of the amount of light emitted from the exposing unit,
K2 is a rate of change of D_M per unit change of the amount of light emitted from the exposing unit,
K3 is a unit change of D_L per unit change of the developing voltage,
K4 is a unit change of D_M per unit change of the developing voltage,
K5 is a unit change of D_H per unit change of the developing voltage, and
D_L, D_M, and D_H are related such that $D_L < D_M < D_H$.

13. (Previously Presented) The image-forming apparatus according to Claim 1, wherein energy for the developing section to develop the image is at least one of a developing voltage applied to a developing roller, a supply voltage applied to a toner supplying roller, and a charging voltage applied to a charging roller.

14. (Previously Presented) The image-forming apparatus according to Claim 1, wherein energy for the image-forming section is an amount of light emitted from either an LED or a laser.

15. (New) An image-forming apparatus comprising:

at least one image-forming section that has an exposing unit and a developing unit, said at least one image-forming section transferring an image of a density detection pattern having a plurality of pattern segments of different duties expressed in terms of a number of dots per unit area, the image being transferred from the image forming section to an intermediate transfer body under a predetermined printing condition;

a density detector that outputs detection values indicative of densities of the plurality of pattern segments transferred to the intermediate transfer body; and

a controller that determines a correction value based on differences between the detection values and corresponding target values of the plurality of pattern segments, the correction value being weighted in accordance with the detection values of the plurality of pattern segments, and being used to modify the printing condition.

16. (New) The image-forming apparatus according to Claim 15, wherein said controller controls said image-forming section and said density detector to perform:

a first density detection operation in which said at least one image-forming section forms the image of density detection pattern with a first printing condition and then said controller calculates a first correction value based on the density of the

plurality of pattern segments detected by said density detector, said controller producing a second printing condition using the first correction value; and

a second density detection operation in which the image-forming section forms the image of density detection pattern with the second printing condition, and then said controller calculates a second correction value based on the density of the plurality of pattern segments detected by said density detector, said controller producing a third printing condition using the second correction value.

17. (New) The image-forming apparatus according to Claim 15, wherein said controller controls said image-forming section and said density detector to perform:

a first density detection operation in which said at least one image-forming section forms the image of density detection pattern with a printing condition, and then said controller calculates a correction value based on the density of the plurality of pattern segments detected by said density detector.

18. (New) An image-forming apparatus comprising:

at least one image-forming section that has an exposing unit and a developing unit, said at least one image-forming section transferring an image of a density detection pattern having a plurality of pattern segments of different duties expressed in terms of a number of dots per unit area, the image being transferred from the image forming section onto a transport belt under a predetermined printing condition;

a density detector that outputs detection values indicative of densities of the plurality of pattern segments transferred onto the transport belt; and

a controller that determines a correction value based on differences between the detection values and corresponding target values of the plurality of pattern segments, the correction value being weighted in accordance with the detection values of the plurality of pattern segments, and being used to modify the printing condition.

19. (New) The image-forming apparatus according to Claim 18 wherein said controller controls said image-forming section and said density detector to perform:

a first density detection operation in which said at least one image-forming section forms the image of density detection pattern with a first printing condition, and then said controller calculates a first correction value based on the density of the plurality of pattern segments detected by said density detector, said controller producing a second printing condition using the first correction value; and

a second density detection operation in which the image-forming section forms the image of density detection pattern with the second printing condition, and then said controller calculates a second correction value based on the density of the plurality of pattern segments detected by said density detector, said controller producing a third printing condition using the second correction value.

20. (New) The image-forming apparatus according to Claim 18, wherein said controller controls said image-forming section and said density detector to perform:

a first density detection operation in which said at least one image-forming section forms the image of density detection pattern with a printing condition, and then said controller calculates a correction value based on the density of the plurality of pattern segments detected by said density detector.